

What is claimed is:

- Sub A1
- 00200T-093-100200
- 1 1. A method for holding up R-unit operands for a minimum number of cycles
2 until all prior updates have completed by comparing addresses in at least one queue and
3 interlocking valid R-unit register address matches, the method comprising:
4 receiving a plurality of R-unit register addresses;
5 storing said R-unit register addresses in a plurality of queues;
6 accessing said queues;
7 comparing said R-unit register addresses;
8 determining matches between R-unit register addresses; and
9 implementing one or more interlocks after said determining a valid match.
 - 1 2. The method of claim 1 wherein said interlock causes a read instruction
2 not to execute.
 - 1 3. The method of claim 1 wherein said plurality of queues includes a
2 write queue, pre-write queue and a read queue.
 - 1 4. The method of claim 3 wherein a bypass sends an R-unit register addresses
2 when said read queue is empty.
 - 1 5. The method of claim 3 wherein said comparing includes comparing
2 said R-unit register addresses sent to said read queue against said R-unit register
3 addresses sent to said write queue.

POU920000162US1

002001"EEZ950

1 6. The method in claim 3 wherein said determining includes matching a
2 valid R-unit register addresses of said write queue and said read queue.

1 7. The method in claim 3 wherein said determining includes matching
2 said valid R-unit register addresses of said pre-write queue and said read queue.

1 8. The method in claim 1 wherein said interlocks are implemented after
2 said valid R-unit register address match is determined.

1 9. The method in claim 1 wherein said interlocks prevent read
2 instructions from being processed.

1 10. The method in claim 1 wherein said write queue accumulates R-unit
2 register addresses.

1 11. The method in claim 1 wherein said updating occurs when an SRAM
2 receives the accumulated results from said write queue.

00200T E9E22960

1 12. A system for holding up R-unit operands for a minimum number of cycles
2 until all prior updates have completed by comparing R-unit register addresses in at least
3 one queue and interlocking valid R-unit register address matches, the system comprising:
4 a plurality of queues for storing R-unit register addresses;
5 a comparator for comparing said R-unit register addresses in said plurality
6 of queues and determining matches between R-unit register addresses; and
7 a plurality of interlocks that are implemented after determining valid
8 matches of said R-unit register addresses.

1 13. The system of claim 12 wherein one of said interlocks causes a read
2 instruction not to execute.

1 14. The system of claim 12 wherein said plurality of queues includes a
2 write queue, a pre-write queue, and a read queue.

1 15. The system of claim 14 further comprising a bypass that sends an R-unit
2 register addresses when said read queue is empty.

1 16. The system of claim 14 wherein said comparator compares
2 said R-unit register addresses sent to said read queue against said R-unit register
3 addresses sent to said write queue.

1 17. The system in claim 15 wherein said comparator determines said valid
2 R-unit register address matches between said write queue and said read queue.

00200T"E9E/2950

1 18. The system in claim 15 wherein said comparator determines said valid
2 R-unit register address matches between said pre-write queue and said read queue.

1 19. The system in claim 13 wherein said interlocks are implemented after said
2 valid R-unit register address match is determined.

1 20. The system in claim 13 wherein said interlocks prevent read instructions
2 from being processed.

1 21. The system in claim 14 wherein said updating allows R-unit register
2 addresses to accumulate in said write queue.

1 22. The system in claim 14 wherein said R-unit is updated when an SRAM
2 receives the accumulated results from said write queue.